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April 25, 1980

Dr. Joshua Lederberg
President
The Rockefeller University
New York, New York 10021

Dear Josh:

In reply to your inquiry of April 3, I have scanned my files for relevant information on the radioprotective effects of chemicals with respect to radiation carcinogenesis. The best summary I can come up with is the enclosed United Nations Report. As you can see from the enclosure, there is some evidence of dose-reducing activity of sulfhydryl compounds (AET and cysteamine) in experimental carcinogenesis, but the data are somewhat inconsistent. At most, the observed protection amounts to a dose-reduction factor of no more than 2-3. Clearly, the data are skimpy and limited to acute exposures in the high dose range (hundreds of rads).

As to radioprotection in the diagnostic dose range, I know of no cogent data. It is noteworthy, however, that AET and cysteamine must be given at relatively high dose levels to confer protection on mice, and comparable levels in human beings are likely to be toxic.

I don't know whether this subject is still under study at ORNL or BNL, but I think that John Yuhas (Dept. of Radiology, University of New Mexico School of Medicine) is actively pursuing it.

Best regards.

Sincerely,

Arthur C. Upton, M.D.
Professor and Chairman

ACU/lw

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Upton @
"Radiation Resistance / protection"